REMARKS

No amendments were made to the claims. Therefore, the present application has pending claims 2-19 and 21-23.

Applicants' Attorney, the undersigned, wishes to thank Examiner Levitan for the courtesy extended during the recent telephone interview during which the features of the present invention as recited in the claims and the differences between the features of the present invention as recited in the claims and the references of record were discussed. However, should the Examiner have further questions, the Examiner is requested to contact applicant's attorneys.

Applicant's attorney, the undersigned, attempted to point out to the Examiner that the present invention as now recited in the claims departs from the requirements of the OSI reference model since the present invention generates the lower layer output information to be used to transmit a packet including lower layer input information and higher layer input information based on the higher layer input information and the lower layer input information, rather than only the higher layer input information as required by the OSI reference model.

Thus, as discussed during the interview the present invention implements its departure from the requirements of the OSI reference model by providing an interwork router which retrieves routes and generates the second VPN identifier (L2) based on the first VPN identifier (L2) and the destination IP address (L3). This departure from the requirements of the OSI reference model implemented by the interwork router means that the interwork router violates the border of L2 and L3. There is absolutely no

teaching or suggestion of this type of violation of the border of L2 and L3 of the OSI reference model in McCloghrie or Chase whether taken individually or in combination with each other as suggested by the Examiner in the Office Action.

Claims 2-19 and 21-23 stand rejected under 35 USC §103(a) as being unpatentable over McCloghrie (U.S. Patent No. 6,035,105) in view of Chase (U.S. Patent No. 6,081,524). This rejection is traversed for the following reasons. Applicants submit that the features of the present invention as now recited in claims 2-19 and 21-23 are not taught or suggested by McCloghrie or Chase whether taken individually or in combination with each other as suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

The present invention is directed to a packet communication apparatus, system and method implemented in the packet communication apparatus.

According to the present invention the packet communication apparatus transmits a packet from a first network comprising a first Virtual Private Network (VPN) to a second network comprising a plurality of VPNs, wherein the packet includes a destination Internet Protocol (IP) address on Layer 3 (L3) or higher, and a first VPN identifier on Layer 2 (L2) used to compose the first VPN in the first network.

Further, according to the present invention the packet communication apparatus includes a packet generating unit which generates a second VPN identifier on L2 used to compose one of the plurality of VPNs in the second network based on the destination IP address on L3 and the first VPN identifier

on L2, and a transmitter which transmits a packet having added thereto said second VPN identifier on L2, wherein the first VPN on L2 is interconnected to the plurality of VPNs in the second network.

Thus, based on the above the unique features of the present invention as recited in each of the claims 2, 6, and 10 includes a generating unit which generates a second VPN identifier on Layer 2 used to compose one of the VPNs in the second network based on a destination IP address on Layer 3 and a first VPN identifier on Layer 2.

Further, based on the above other unique features of the present invention as recited in each of the claims 13, 17 and 21 include generating an index based on a destination IP address on Layer 3 and the first VPN identifier on Layer 2, and generating the second VPN identifier on Layer 2 used to compose one of the VPNs in the second network based on a destination IP address on Layer 3 and the first VPN identifier on Layer 2 and the index.

By using the above described unique features of the present invention, packets can be transferred in the VPN composed over the two networks so as to be prevented from mixing with packets belonging to other traffic. Attention is directed to page 6 lines 38-41 of the present application.

The above described features of the present invention now more clearly recited in the claims are not taught or suggested by any of the references of record whether taken individually or in combination with each other. Particularly, the above described features of the present invention as now more clearly recited in the claims are not taught or suggested by

McCloghrie or Chase whether taken individually or in combination with each other as suggested by the Examiner.

Applicant notes that the Examiner argues in page 3 of the Office Action that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to add implementing this method in IP environment, wherein the packets are IP packets and VPN identifiers are on layer 2 and the destination IP address is on Layer 3 to the system of McCloghrie to implement the method in widely used IP networks, like Internet". Applicants do not agree with this allegation.

Applicant submit that if one of ordinary skill in the art at the time the invention was made applied the VLAN technology of McCloghrie to the IP environment, then the resulting modified technology would not be the same technology as that of the present invention as recited in the claims.

Further, Applicant notes that the Examiner argues in page 2 of the Office Action that McCloghrie discloses "A packet generating unit/router which generates a second VPN identifier used to compose a second VPN in the second network based on the destination address and information in the first VPN identifier (LAN switch 103 on Fig. 1 and 3:7-14 generating a second header by changing tag 107 as shown on Fig. 2 and 3:49-67, changing the first VLAN identifier to a second VLAN identifier 1 :59-63)". Applicants do not agree with this allegation.

As per the above, the present invention provides a generating unit which generates a second VPN identifier on Layer 2 used to compose one of the VPNs in the second network based on a destination IP address on Layer 3 and a first VPN identifier on Layer 2. In addition as per the above, the

present invention provides the functions of generating an index based on a destination IP address on Layer 3 and the first VPN identifier on Layer 2, and generating the second VPN identifier on Layer 2 used to compose one of the VPNs in the second network based on a destination IP address on Layer 3 and the first VPN identifier on Layer 2 and the index. These features are clearly not taught or suggested by McCloghrie.

In Chase the routing decision would result in a layer 3 PDU 1011 being forwarded to router/switch 1006, 1007 that is then encapsulated with a layer 2 frame, wherein the layer 2 frame is addressed to Customer Site. The switch 1006 in Chase then forwards the frame via a trunk 1008 to fame relay switch 1009 and at the egress port of frame relay switch 1009, the DLC1 of frame relay frame 1010 is replaced with a value indicating that the frame originated from, in this case, VPN #I. The frame relay frame 101 0 is then delivered to the Customer B router. (see, e.g., col. 10, lines 16-30).

Thus, in Chase the layer 2 information is discarded and never used along with layer 3 information to generate second header information which is included in the packet for routing purposes as in the present invention as recited in the claims.

Therefore, based on the above it is clear that each of McCloghrie and Chase fails to teach or suggest the features of the present invention as now more clearly recited in the claims and as such does not render obvious the claimed invention when combined with each other. Accordingly, reconsideration and withdrawal of the 35 USC §103(a) rejection of claims 2-19 and 21-23 is respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references utilized in the rejection of claims 2-19 and 21-23.

In view of the foregoing amendments and remarks, applicants submit that claims 2-19 and 21-23 are in condition for allowance. Accordingly, early allowance of claims 2-19 and 21-23 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of BRUNDIDGE & STANGER, P.C., Deposit Account No. 50-4888 (501.37526CX1).

Respectfully submitted,

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